

78. A sender for use in a communications system in which the sender and a receiver are connected to each other via a transmission line, said sender comprising:

a sending signal generating means for generating a plurality of carrier signals conveying same signal contents based on an input signal, wherein the plurality of carrier signals are non-interfering with each other both on the axis of frequency and the axis of time; and

a selection control means for controlling respective signal intensity of said plurality of carrier signals according to transmission characteristics of said plurality of carrier signals detected on the receiver side.

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10. A sender for use in a communications system in which the sender and a receiver are connected to each other via a transmission line, said sender comprising:

an encoder for generating a plurality of carrier signals conveying same signal contents based on an input signal;

a plurality of filters, with said plurality of carrier signals as input, for outputting a plurality of signals, said plurality of signals free from interfering with each other both on the axis of frequency and the axis of time; and

a sending signal synthesizing means for synthesizing the outputs of said filters based on transmission characteristics of said plurality of signals detected on the receiver side.

1014. A receiver for use in a communication system in which a sender and a receiver are connected to each other via a transmission line, said receiver comprising:

transmission line characteristics measuring means for receiving a plurality of carrier signals conveying same signal contents based on an input signal and for determining transmission line characteristics in respective frequency bands for said plurality of carrier signals;

receiving signal synthesizing means for synthesizing the outputs of said transmission line characteristics measuring means; and

selection control means for controlling respective signal intensity of said plurality of carrier signals in synthesizing carrier signals based on the transmission characteristics of respective carrier signals.

9328. A communication system in which a sender and a receiver are connected to each other, wherein the sender has:

a carrier signal generating means for generating a plurality of carrier signals with different frequencies based on an input signal; and,

a multiplication means for sending out on a transmission line said plurality of carrier signals modulated by said input signal, wherein the carrier signals, after modulated by said input signal, convey same signal contents; and,

wherein the receiver is provided with:

a transmission line characteristics measuring means for receiving the plurality of carrier signals modulated by said input signal from the sender and for determining transmission line characteristics in respective frequency bands of said plurality of carrier signals; and

a receiving signal synthesizing means for synthesizing said plurality of carrier signals on the basis of the transmission line characteristics;

wherein, at least one of the sender and the receiver includes a selection control means for controlling respective signal intensity of the plurality of carrier signals based on the transmission characteristics of the respective carrier signals.

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29. A communication system in which a sender and a receiver are connected to each other, wherein the sender has:

an encoder for generating a plurality of carrier signals conveying same signal contents based on an input signal,

a plurality of filters for, with said plurality of carrier signals as input, outputting a plurality of signals, said plurality of signals satisfying the orthogonal requirements both on the axis of frequency and the axis of time; and

a sending signal synthesizing means for synthesizing the outputs of said filters and generating a plurality of output signals,

and wherein the receiver comprises:

a transmission line characteristics measuring means for receiving said plurality of output signals and determining respective transmission line characteristics of said plurality of output signals; and

a receiving signal synthesizing means for synthesizing said plurality of output signals on the basis of a measurement results by said transmission line characteristics measuring means.

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<sup>24</sup>30. A communication system as defined in claim <sup>23</sup>28, further comprising a selection control means for controlling said receiving signal synthesizing means with regard to the respective signal intensity at the time of transmission among said plurality of carrier signals on the basis of the transmission characteristics on said transmission line of the respective carrier signals.

<sup>41</sup>32. A communication system as defined in claim <sup>40</sup>29, wherein there is further provided in either the sender or the receiver a selection control means for controlling said encoder with regard to the respective signal intensity at the time of transmission among said plurality of carrier signals on the basis of the transmission characteristics on said transmission line of the respective carrier signals determined by said transmission line characteristics measuring means in said receiver.

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<sup>28</sup>33. A communication system as defined in claim <sup>23</sup>28, wherein said sender includes a sending signal generating means comprising a carrier signal generating means and a multiplication means for each of said plurality of carrier signals, and furthermore with a sending signal synthesizing means for synthesizing the outputs from the respective multiplication means.

<sup>42</sup>34. A communication system as defined in claim <sup>40</sup>29, wherein said encoder in said sender selects a carrier to allot for each of said plurality of carrier signals.

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